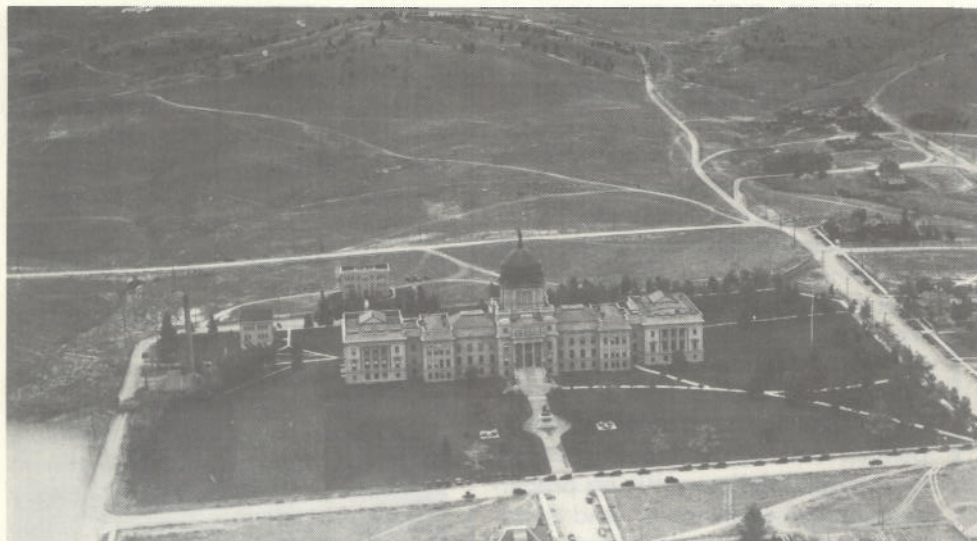




Aerial View of the Capitol Building in Helena, taken in the early 1930's. (Photo from the L. H. Jorud Collection, NW Repro.).



MONTANA AERONAUTICS COMMISSION

Volume 23 — No. 2

February, 1972

ANNUAL MATA CONVENTION IN GREAT FALLS

The Montana Aviation Trades Association held its annual convention February 8 and 9, 1972 at the Rainbow Hotel in Great Falls. Presiding at the two day convention was newly elected President Mike Strand of Kalispell.

The other 1972 officers and directors are: Sig Ugrin, Miles City, Vice-President; Jim Rothrock, Billings, Secretary; Directors—Walter Hensley, Havre; Eugene Mendel, Great Falls; Bill Rodgers, Lewistown; Pat Doyle, Turner; and Jim Rothrock.

Tuesday—The convention opened at 11:00 with a Board of Directors meeting. The afternoon speakers were: Del Siewert, Executive Secretary, Montana Chamber of Commerce; and Felix A. "Phil" Topping, Aircraft Owners and Pilots Association.

In the evening, a cocktail hour and smorgasbord was enjoyed at the hotel.

Wednesday—Morning activities included a panel presentation by Wes Morrison, Fire Control Officer, BLM and Al Hammond, Air Operations Officer, USFS; and speaker Ward Junkermier, CPA of Great Falls.



Seated, left to right: Jim Rothrock, Bitty Herrin, Mike Strand, Walt Hensley. Standing: Gene Mendel, Sig Ugrin, and Bill Rogers.

Dr. R. Wayne Pace, Chairman, Department of Speech and Communications, University of Montana, spoke on "Why Can't People Get Things Straight" at the Wednesday luncheon.

The afternoon activities consisted of a Business Meeting and panel presentation by Mel Selluns, Cessna Aircraft, Agriculture Department and Ron Hanson of AMCHE.

At the business meeting, the officers reluctantly accepted the resignation of Mrs. Bitty Herrin, MATA Secretary. Mrs. Herrin had very ably served as Association Secretary for the past 15 years.

The convention closed with a cocktail hour and banquet. Entertainment at the banquet was provided by the

Treasurerstators of Great Falls.

REGISTRATION

The Montana Aeronautics Commission is continuing to receive and process the 1972 Montana Pilot and Aircraft registrations. However, at this same time last year, many more pilots and aircraft had been registered. So, once again, the Commission would like to urge all Montana Pilots and Aircraft owners to please hurry and register. April 1st is not that far away!

**Official Monthly Publication
City/County Airport
of the
MONTANA AERONAUTICS
COMMISSION**

Phone 449-2506

Box 1698

Helena, Montana 59601

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Edited by: R. Bowsher



**FEDERAL AVIATION
ADMINISTRATION
ITINERARY LISTINGS**

Airport	Feb.	Mar.	Apr.
Great Falls	6	3	2
Havre		10	
Missoula	20	17	16
Kalispell	19		
Butte			23
Culbertson		2	
Glasgow	5		1
Glendive	20		16
Lewistown		16	
Miles City	19		15
Sidney		3	

NOTE: Provisions have been made to give private, commercial and flight examinations **ON AN APPOINTMENT BASIS ONLY** at the following FAA Flight Service Stations.

Bozeman	Lewistown
Butte	Livingston
Cut Bank	Miles City
Dillon	Missoula
	Great Falls

NOTE: Until further notice GADO #1 in Billings will be open the third Saturday of each month **ON AN APPOINTMENT BASIS ONLY!**

Commercial airlines have airlifted an average of 4,800 baby chickens from Massachusetts to Colombia, South America, every week for the past ten years; on their return flight they bring 25 tons of flowers.

**FIRST OPERATIONAL
CATEGORY IIIa ILS
AT DULLES INTERNATIONAL**

FAA, February 17, 1972—A major step toward the goal of all-weather landings has been taken by the Federal Aviation Administration of the Department of Transportation with the commissioning of the first operational Category IIIa instrument landing system (ILS) in the United States at Dulles International Airport serving Washington, D.C.

FAA Administrator John H. Shaffer pointed out that a Category IIIa ILS allows qualified crews flying properly-equipped airplanes to land under runway visibility minimums down to 700 feet. Until now, the lowest authorized landing minimums have been 1200 feet on designated airport runways equipped with a Category II operations ILS. To date, 21 U.S. airports have been approved for Category II operations.

The Category IIIa equipment has been installed on a Runway 1 Right at Dulles.

Although Category IIIa ILS components are similar to Category II equipment, the localizer and glide slope must be capable of performing within more stringent tolerances. Category III equipment must provide improved signal accuracy and reliability and have distinctive monitoring capabilities that would preclude the transmission of erroneous signals.

Category IIIa landing operations, in contrast to those in Category II, are not governed by any specific "decision heights." In a Category II landing, the pilot must have the runway or runway lights in sight at a decision height (altitude) of 100 feet in order to continue his approach.

Shaffer said: "The aviation industry and the FAA have been working for many years towards the ultimate goal of all-weather landings. Efforts to achieve this goal have resulted in a gradual, conservative reduction in landing minimums down to 1200 RVR with a 100-foot decision height at designated Category II airports. Category IIIa is the next logical step in reducing landing minimums. As in

the case of Category II operations, certain criteria with respect to airport and ground facilities, airborne systems, training requirements and maintenance standards must be met before Category IIIa minimums can be approved for aircraft operators. A number of air carriers are in the process of qualifying for Category IIIa authorization".

The Category IIIa equipment at Dulles, known as the STAN-37/38 system, was manufactured by Standard Telephones and Cables, Ltd. of Great Britain. It was made available to the FAA by the British Department of Trade and Industry on a two-year loan for evaluation with an option to buy.

FAA has two additional Category III ILS systems on order from a U.S. manufacturer. The first unit will be installed at FAA's National Aviation Facilities Experimental Center at Atlantic City with delivery scheduled for July. The second unit will be installed for operational use at another airport to be announced later.

Unlike Category II ILS facilities, the STAN-37/38 system consists of solid state electronic components. Its unique features include triplicate elements that sense the status of both operating and standby systems, the latter having instantaneous change-over ability in the event the main transmitter fails. The system also utilizes batteries to assure uninterrupted ILS operation in the event of commercial power failure. Emergency stand-by power is also available for the approach lights.

In providing horizontal guidance to the runway centerline, the localizer uses a 24-element antenna array with a 165-foot long reflector, assuring excellent course structure. In providing descent or vertical guidance, the glide slope employs highly directional antennas in a null reference configuration.

Centerline lighting at Dulles also was upgraded to 2000 candlepower on the Category IIIa runway and a third transmissometer was installed to provide the required runway visual range (RVR) readings along the

mid-portion of the runway. Existing approach and touchdown zone lighting already meet Category IIIa criteria.

Installation of the new equipment at Dulles was accomplished with the assistance of British and FAA Eastern Region engineers. FAA flight inspection crews conducted a number of special flight checks on the system before it was operationally approved.



YOUR ACCIDENT PREVENTION COUNSELOR IN MISSOULA

A native Montanan, Jack Sterling is the Chief Flight Instructor of the Primary School at Executive Skyflite in Missoula. Sterling's FAA certificates include a Commercial—SEL, and Flight Instructor—Airplane and Instrument.

Flying since early 1969, Sterling received all his training at Executive Skyflite. He obtained his private license in March of 1969, Commercial in June and Flight Instructor—Airplane in July. In October of 1970, Sterling became Chief Flight Instructor of the Primary School for Executive and received his Instrument Instructor in December of the same year.

Sterling attended grade and high school in Ronan and Missoula and graduated from Carroll College in Helena with a BA degree in Sociology. He presently resides at 525 South 5th East in Missoula with his wife Carol.

About one half (48% according to a recent Gallup survey) of all adults in the U. S. have flown on airlines.

FAA TO STUDY SPATIAL DISORIENTATION

FAA, January, 1972—The Federal Aviation Administration of the Department of Transportation has awarded a \$55,900 contract to Technology, Inc. of San Antonio, Tex., to study how lighted visual aids might help pilots avoid spatial disorientation when reference to the ground is lost during takeoffs and landings because of darkness, poor visibility or other conditions.

Several different light patterns and sitings will be evaluated by the contractor and the most promising system installed and tested at an airfield in a sparsely populated area near San Antonio. The light arrays selected will be evaluated during both daylight and night time hours in actual flights to and from the test runway.

Among the various light patterns to be considered in the test are: a series of horizontal strings of lights extending outward from the end of the runway for a suitable distance; two lines of lights extending outwards and parallel to the runway boundaries; and two horizontal arrays of light, situated several miles from the runway where no ground lights exists at approximately a 45 degree angle to the right and left of the takeoff or final approach paths.

The contractor also will develop criteria to be used in evaluating runways for conditions which could contribute to spatial disorientation during takeoff and approach for landing. Such conditions as the lack of adequate visual reference points can be especially hazardous during night time operations or in periods of restricted visibility.

Spatial disorientation may occur in pilots when they lose visual reference to the ground. Without this reference, the accelerations of the body detected by fluid in the semi-circular canals of the inner ear can be misinterpreted as gravitational forces causing the pilot to take incorrect action.

The study, including flights tests and evaluation, will be completed within 14 months.

LETTER TO AIRMEN

FAA January 14, 1972—Effective 1 February 1972, the Missoula Flight Service Station and Weather Service Office will initiate "One-Call" pilot briefing service to aviation interests in the Missoula area.

"One-Call" pilot briefing service combines the efforts of two Government agencies to provide the best aviation services available. The interests of the aviation community are best served when the aviation user is able to obtain adequate aviation briefing service by a single telephone call or by a single stop at the airport. Therefore, the National Weather Service and the Federal Aviation Administration are cooperating to provide this type service wherever feasible.

The "One Call" system provides for all aviation weather briefing telephone requests to be received in the Flight Service Station on lines listed under the Flight Service Station. The Flight Service Specialist will normally provide the briefing. By a switching arrangement, the pilot can be referred to the Weather Service for weather briefings when the weather information needed exceeds the Flight Service Station capabilities or when the pilot so requests.

The Missoula Flight Service Station plans to rearrange its briefing facilities to be more convenient for in-person and self-briefing requests. Facsimile weather chart equipment is being installed for an improved weather display.

In addition, if you are planning a pilot meeting, conference, or some type aviation gathering, our facility may be of assistance. We could furnish a speaker or possibly show an FAA aviation film from the FAA's excellent film library. Three weeks notice would be required to have a film available.

RICHARD J. CIBAK

Chief

Missoula Flight Service
Station

SAFE APPROACH



By JACK WILSON
Assistant Director
Safety and Compliance

Generally speaking, one of the functions of government and bureaucracy has increasingly been in the area of protecting the people from themselves. In the process, they have decreed that all automobiles must have seat belts, there must be break-away devices for safety purposes, helmets on motor scooter and motorcycle riders, roll-bars on practically all automobiles that do any type of fast driving in sporting events, etc.

As most of you well know, the Federal government through Congress and the Federal Aviation Administration has declared that all aircraft, new and used, in the very near future, must have an emergency locator transmitter, downed aircraft locator beacon, or whatever you may want to call it. This, of course, is a device designed to hasten the finding of a lost and downed or crashed aircraft, speed up the recovery of the occupants, and in some cases, even survivors of such crashes.

These devices must adhere to certain specifications prescribed by the Federal Aviation Administration regarding heat, cold, acceleration tolerances, etc. Additionally, they must be automatically actuated upon the crash of the aircraft.

To the ordinary pilot, this would very likely appear to be cruel and inhuman punishment in the highest degree. That the government would require an aircraft owner to have such a device to save himself is, of course, completely unnecessary. Under certain circumstances I would definitely agree with him.

I would agree if the owner doesn't keep the emergency locator trans-

mitter's batteries up-to-date, leaves the locator on the shelf, doesn't file a flight plan, or if he files a flight plan, he doesn't let someone know that there is such a transmitter aboard the aircraft.

The foregoing has all been leading up to an incident which occurred on the 10th of December, 1971, between Great Falls, Montana and Calgary, Alberta, Canada. It was on that morning that a Canadian BE-35 Bonanza number CF VAU piloted by a Mr. Chapman of the Calgary Aero Club departed Great Falls, Montana at 0128 a.m. Mountain Standard Time flying direct to Calgary with 2 plus 05 hours enroute, 5 plus 30 hours of fuel on board and a VFR Flight Plan with three passengers for a total of 4 aboard the aircraft. He was due to arrive in Calgary at 3:33 a.m. Mountain Standard Time.

This aircraft had originally departed Winnipeg for Calgary. Because of inclement weather along the route north of Montana, it had diverted south and landed in Minot, North Dakota. Chapman then filed from Minot to Great Falls, landing at Great Falls with no apparent problem. He then filed from Great Falls to Calgary and departed as stated above, at 0128 Mountain Standard Time on 10 December. At 0225 Mountain Standard Time he contacted Cut Bank Flight Service Station for the Lethbridge weather. The weather was reported okay at both Lethbridge and Calgary. However, this aircraft failed to reach its destination. The proper agencies were alerted to the fact that the aircraft had not arrived at its destination and as soon as daylight arrived preparations were made to search for this aircraft. The weather had by that time deteriorated to IFR conditions in practically all of Northern Montana and Southern Alberta.

To effect proper coordination with the Canadian authorities, I called the Rescue Control Center at Edmonton and got in contact with a Captain Moore who indicated that he had finally found out that there was a Dart Emergency Transmitter aboard the missing aircraft. This brings up

the point that the pilot had at no time indicated on his Flight Plan and/or verbally to anyone that there was such a transmitter aboard. It was only after checking with a member of the Calgary Aero Club in Calgary that it was discovered that this emergency transmitter was aboard.

Herb Sammons, the Search Coordinator in the Cut Bank Search District, was notified that there was an emergency transmitter aboard. At that time, he was already making preparations for the start of the search even though the weather was very marginal and/or IFR. Herb dispatched two aircraft: One returned because of the IFR conditions; the other, a Cessna 182, piloted by Allen Anderson of Cut Bank managed to reach on top and was able to monitor for the emergency transmitter signal on 121.5 MHz.

Eventually, at 10,000 feet with two miles visibility with ice crystals, Anderson and his observer, who incidentally was his brother, started to pick up the signals of the emergency rescue transmitter when they were three miles south of the Montana-Canadian border. Through the process of using the old Build and Fade radio orientation method for the Adcock Radio range, Anderson was able to localize the site of the emergency rescue transmitter as being slightly east and north of Del Bonita, Alberta. The Canadian Air Force authorities were then notified and brought in more exotic type radio equipment which would give needle indication so that they could fly directly to an emergency signal and they pin-pointed it a little closer.

At that time, ground parties proceeded to the wreckage. They found that all four occupants had received fatal injuries in the crash located three statute miles north of the border and eleven miles east of Del Bonita. This was within two miles of the site determined by Allen Anderson as to where the aircraft most probably was located even though the weather was so bad that at no time had anyone in the air seen the wreckage.

The foregoing is merely an ac-

count of a very short search, but hopefully it will give some indication that all the equipment you have is really worthless unless it is utilized in the proper manner. So if you have emergency equipment, please let someone know. It is vital to your safety or to someone searching for you if you do happen to crash.

At the present time I have no further knowledge of this crashed aircraft, as to what the investigations have determined as to the most probable cause, or what or why it was so imperative that this airplane and occupants arrive in Calgary, Alberta at 3:33 a.m. in the morning.

I wish to again call your attention to the requirements for the registration of your FAA Pilot Certificate and the registration of your aircraft with the Montana Aeronautics Commission. If you have not accomplished these two items, please do so as soon as possible. If you need additional forms or the proper forms and your local flight operator does not have them, please contact the Montana Aeronautics Commission at P.O. Box 1698 and we will forward the proper forms to you.



FAA CERTIFICATES ISSUED RECENTLY TO MONTANA PILOTS STUDENT

Loren Mathis—White Sulphur Springs
James Benner—Billings
Robert Engstrom—Medicine Lake

PRIVATE

Brent Vettor—Billings
Anthony Kochivar—Windham
Ralph Lee—Plentywood
Richard Marshall—Saco
Donald Shipp—Saco
Ned Tranel—Miles City
Glenn Park—Ponoka, Alberta,
Canada

Edward Stremecki—Grand Centre,
Alberta, Canada

Wilbert Coast—Lac LaBiche, Alberta,
Canada

Gordon Traweek—Baker
Frederick Parsons—Calgary, Alberta,
Canada

Arthur Bishop—Calgary, Alberta,
Canada

Thomas Mefford—Sheridan, Wyo.

Danielle Etchart—Glasgow

Duane Cebulski—Malta

Richard Williamson—Malta

Robert Bouley—Billings

Randal Sebring—Minton, Sask., Can.

Robert Iverson—Sidney

William Holt—Wetaskiwin, Alberta,
Canada

Melvin Rogstad—Miles City

Bruce Townsend—KalisPELL

Robert Fischer—Hall

Brian McCool—Calgary, Alberta,
Canada

Gerald Stewart—Calgary, Alberta,
Canada

Benny Steenson—Bigfork

John Baglien—Bozeman

Delbert Riley—Columbia Falls

COMMERCIAL

Lester Crawford, Jr.—Billings

Leo Van Uden—Great Falls

Clint Collins—Manhattan

Thomas Peterson—Pray

Charles Bagby—Fargo, North Dakota

Bruce Gaglia—Bozeman

MULTI-ENGINE

Gary Dahl—Wolf Point

Jason Laguna—Lyons, Colorado

Charles Bagby—Fargo, North Dakota

INSTRUMENT RATING

Richard Van Luchene—Billings

Harry Rodenberg—Wolf Point

Dixie Jewett—Ketchikan, Alaska

Jerry Rench—Fort Worth, Texas

Larry Ostby—Froid

ATR

Jason Laguna—Lyons, Colorado

Charles Bagby—Fargo, North Dakota

MILITARY COMPETENCE

Jon Drake—Billings (Commercial
Helicopter)

Larry McCormack—Minor Hill,
Tennessee (Rotorcraft)

ADVANCED GROUND INSTRUCTOR

Eugene Wehrman—Billings

MASTER PARACHUTE RIGGER

Ronald Wahl—Missoula

ROTOCRAFT

Richard Burger—Missoula

Vincent Frezzo—Missoula

TYPE RATING

SK-58

Gerald Ohs—Harrison

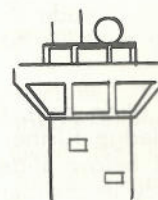
NEW ASSISTANT DIRECTOR AT CAB

Civil Aeronautics Board, January, 1972—Civil Aeronautics Board Chairman Secor D. Browne has appointed William B. Caldwell, Jr., who has had more than 26 years experience in airline economics as Assistant to the Director of the Bureau of Economics, a new position aimed at improving the CAB's capability for evaluating the certificated air carriers' projected financial conditions.

Before entering Government service, Caldwell, 48, was Senior Vice President for Economic Planning and Control for Mohawk Airlines, which he joined in 1962. Prior to that he was Assistant Treasurer for National Airlines where his work in economic cases brought him into regular contact with the operations of the CAB and other regulatory agencies.

He joined National in 1945, upon graduation from the University of Florida with a Bachelor of Science Degree in business administration. He has also done academic work at Harvard Business School.

Caldwell is married to the former Mary Kay McMullen of Clearwater, Florida. They have a son, William B. III, and two daughters, Mrs. Edward Calt and Nancy.



TOWER

OPERATIONS

JANUARY, 1972

	Total Operations	Instrument Operations
Missoula	2,421	524
Billings	3,990	1,887
Helena	2,323	632
Great Falls	4,473	1,637

IFR PILOT EXAM-O-GRAM* NO. 27

RADA APPROACHES (ASR AND PAR)

Department of Transportation
Federal Aviation Administration

At a number of airports, facilities exist for the performance of Airport Surveillance Radar (ASR) and/or Precision Approach Radar (PAR) approaches. Responses to questions in Instrumental Pilot Written Tests concerning these approaches, indicate misconceptions on the part of many applicants. A clarification of some of the points in this area will be attempted in the following questions and answers.

WHAT PUBLICATIONS LIST AIRPORTS HAVING FACILITIES FOR ASR AND PAR APPROACHES? The most important source of information is the Airport/Facility Directory of the **Airman's Information Manual (AIM)**. In the excerpt, notice that both ASR and PAR approaches are listed with their respective minimums. Notice the lower minimums for the precision approach. Airports having radar approach facilities available are also indicated in the Coast and Geodetic Survey Low Altitude Enroute Charts, Area Charts, and Instrument Approach Procedure Charts. On the pages titled, "FAA RADAR CEILING AND VISIBILITY MINIMUMS" in the first part of the Instrument Approach Chart Manual, ASR and PAR minimums are also listed.

Tower 118.5 122.7R
Radar Services: 124.6
ASR Rnwy 20 Ceil 400 Vsbty 1 mi Min Alt 1605'
PAR Rnwy 20 Ceil 200 Vsbty 1/2 mi Min Alt 1405'
(L) BVOR 111.8/ALW on fld.
NDB H—SAB 356°/ALW 176° 3.2NM to fld.

WHAT MINIMUM AIRBORNE RADIO EQUIPMENT IS REQUIRED FOR A RADAR APPROACH? Under normal conditions, the minimum is considered to be a functioning communications radio transmitter and receiver. However, since a radar approach is predicated entirely upon voice instructions from a ground radar controller, in an emergency, only an airborne receiver is required. Means of alerting civil and military radar facilities of an emergency are described in Part I of the **Airman's Information Manual**, i.e., triangular patterns and chaff procedures. Upon observation of one of these patterns by a radar facility, all possible assistance will be given. If appropriate, a radar approach may be given.

HOW ARE ASR AND PAR APPROACHES SIMILAR? In both types of approach procedures, all navigational guidance is provided by ATC use of ground radar. When conducting either type of procedure, the pilot must comply promptly with all control instructions issued. Headings, altitudes, and rates of turn must be accurately accomplished.

WHAT IS AN ASR APPROACH? An ASR approach is conducted only by surveillance radar. An approach may be made to an airport or a specific runway having an approved surveillance approach. Course guidance, and after passing the final approach fix, distance information are issued each mile from the runway/airport down to the last mile. If requested by the pilot, recommended altitudes may be issued each mile from the runway/airport down to the last mile, where the altitude is at or above the minimum descent altitude (MDA). The recommended altitudes on final decrease 300 feet each mile (approximate three degree descent slope). The pilot should adjust his rate of descent to achieve a rate consistent with recommended altitudes. If the MDA is reached before the missed approach point (MAP), the pilot should maintain this altitude to the MAP. The controller will advise the pilot when he reaches the MAP or one mile from the runway/airport whichever is greater, and if at this point the airport, runway or runway environment is not in sight, a missed approach should be commenced. If, on final, communication is lost for more than 15 seconds, the pilot should take over visually; if unable, he should execute the missed approach procedure.

WHAT IS A PAR APPROACH? A PAR serves the same purpose as an Instrument Landing System (ILS) except guidance information is presented to the pilot through aural rather than visual means. The precision approach starts when the aircraft is within range of the precision radar and contact has been established with the PAR controller. Normally, this occurs approximately eight miles from touchdown, a point to which the pilot is vectored by surveillance radar or is positioned by a non-radar instrument approach procedure. Prior to glide path interception, the final approach airspeed and configuration should be established. When the controller advises the aircraft is intercepting the glide path, power and altitude should be adjusted to maintain a pre-determined rate of descent and airspeed. The rate of descent will vary with aircraft approach speeds and airport glide path angles, but will be near 500 feet per minute.

Prior to intercepting the glide path, the pilot will be advised of communications failure/missed approach procedures and told not to acknowledge further transmissions. The controller will give elevation information as, "slightly/well above" or "slightly/well below glide path" and course information as, "slightly/well right" or "slightly/well left of course." Extreme accuracy in maintaining and correcting headings and rate of descent is essential. The controller will assume the last assigned heading is being maintained and will base further corrections on this assumption. Elevation and azimuth guidance is continued to the landing threshold of the runway, at which point the pilot will be instructed to take over visually. If the runway or runway environment is not in sight at the decision height (DH), a missed approach must be executed. If communication is lost for more than 5 seconds on final, the pilot should take over visually; if unable, he should execute the missed approach procedure.

NOTE: Facilities for PAR approaches have been discontinued at a number of civil airports. Those remaining can be determined by referring to AIM.

The first three references listed below may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402; the fourth is available from the Department of Transportation, Distribution Unit, TAD-484.3, Washington, D. C. 20590.

1. Airman's Information Manual, Parts I and III
2. Instrument Flying Handbook, AC 61-27A
3. USAF Instrument Flying Manual, 51-37
4. Civil Use of U. S. Government Instrument Procedure Charts, AC 90-1A

* Exam-O-Grams are non-directive in nature and are issued solely as an information service to individuals interested in Airman Written Examinations.

FAA INSPECTOR'S CORNER



By George S. Batchelder, Jr.
Accident Prevention Specialist
GADO No. 1, Billings

THOUGHTS ON A WINTER DAY

Winter came to some parts of Montana with considerable emphasis and after a hike up and down the ramp, the ears and nose give a wind-chill indication that is far below the charts.

As airplanes were being dug out, swept off, and heated, all the other precautions necessary came to mind. An old friend in Alaska sent along some tips which I would like to pass along for winter flyers.

Because batteries and electrical systems take such a beating in cold weather we should consider some of the "unseen" reactions taking place. Metal and wiring harnesses are constantly shrinking and expanding with frequent and rapid changes in temperature. Wires have been known to separate at extremely low temperatures when they have been improperly installed. A few extra minutes taken in performing an aircraft preflight inspection can often be rewarding.

Make sure the vents are free and clear of moisture elements, especially so after an aircraft has been exposed to severe weather. Radios as well as their vents, static pressure ports, pitot tubes, heater and carburetor intakes

have been found full of snow and ice. Aircraft exposed to below freezing temperatures for a period of time means cold engines, cold batteries and equipment. The battery may be nearly discharged before the engine is started and with low RPM during the runup, the generator or alternator may not produce sufficient charge to supply the battery and necessary electrical load. Electronic equipment damage can occur with low voltage. Have you ever had communication difficulty immediately after starting the engine? After determining that all electronics and electrical equipment switches are off, allow the warmup to come gradually, and make sure all output is going to the battery. Cold weather operation is a prime time for alternator failures including broken brackets, loose bolts, belts, bad bearings, and broken wires. Burned, shorted, or open contacts have occurred in voltage regulators. Unfortunately some small aircraft are not equipped with an over-voltage relay.

Some Montana aircraft will be or are operating on skis already and some review of do's and don'ts are in order. Preflight all ski rigging during the preflight. When prolonged parking is necessary put something under the skis to prevent them from freezing to the surface. Breaking loose skis by pushing on a wing or tail can break an axle. Taxi carefully, remembering there is no tire to take up shock, and planning is mandatory. There are no brakes, you are at the mercy of the wind, and you must check magnetos while moving. At times landings on snow can be

FAA Aeronautical Center
Flight Standards Technical Division
Operations Branch
P. O. Box 25082
Oklahoma City, Oklahoma 73125 (6/69)
Exam-O-Grams available free of charge—
single copy only per request.
Permission is hereby granted to reproduce this material.

like glassy water in a seaplane. It is very difficult if not impossible to judge height above the surface. Bright sunshine and/or new snow make a power approach and a slow descent necessary. Carry power until the skis contact the surface. Safety cables are a must. The angle of the safety cable of the ski should be greater than 30 degrees to the plane of the ski. The shock cords need constant attention in the cold weather and never use the same fitting for the shock cord and safety cable. Failure of the fitting makes the safety cable useless.

Pages could be written on precautions of rutted snow; deep, loose snow; landing on lakes; and, selecting proper areas free of concealed rocks or logs. The only answer is dual instruction, practice, and experience. Ski flying is different! Don't try it without "know-how."

FILM HANDLING

By Gerald C. Burrows

Insufficient care is being exercised in the handling of films on loan from the Aeronautics Commission. One recently loaned film must be replaced because it was either run through a projector sadly in need of maintenance or improperly threaded into the machine. The film was severely damaged every twelve to eighteen inches along the film's entire 1200 feet. This film can now no longer be used and must be replaced at a cost of \$250.

There have also been instances of the wrong film being sent back to the Commission.

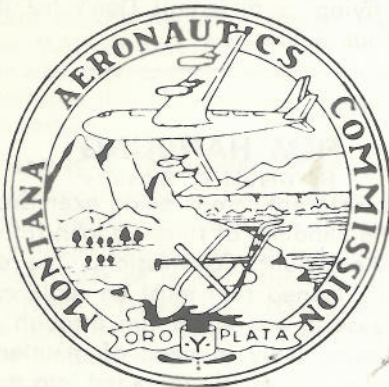
MEMBER

NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

PURPOSE:—"To foster aviation, as an industry, as a mode of transportation for persons and property and as an arm of the national defense; to join with the Federal Government and other groups in **research, development, and advancement of aviation**; to develop uniform laws and regulations; and to otherwise encourage co-operation and mutual aid among the several states."

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February, 1972